FIRST DESCRIPTION OF SEASONAL ACOUSTIC OCCURRENCE OF HUMPBACK WHALES IN SOUTHERN ICELAND

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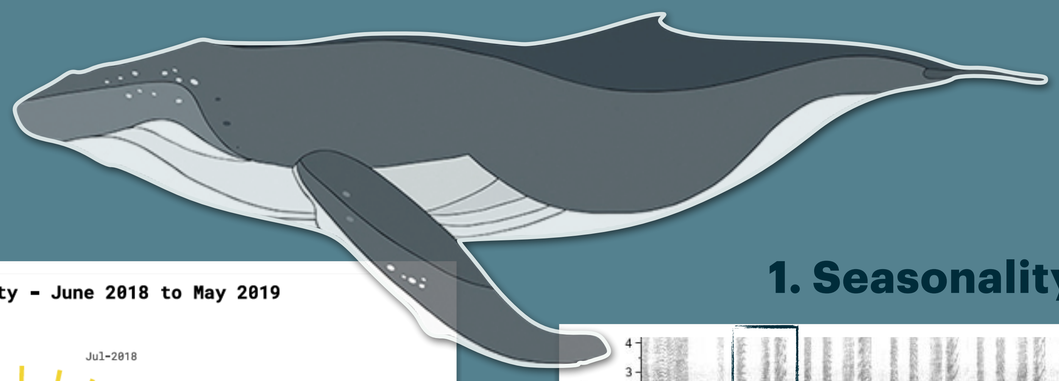
Iceland is a known feeding ground for humpback whales. Their presence is primarily monitored in the North and West/Southwest regions, where they occur year-round. Here, we provide new information about the role of Icelandic waters for the species, by investigating their occurrence and sound production in the South of Iceland.

1. First description of Humpback whale presence in the Vestmannaeyjar archipelago

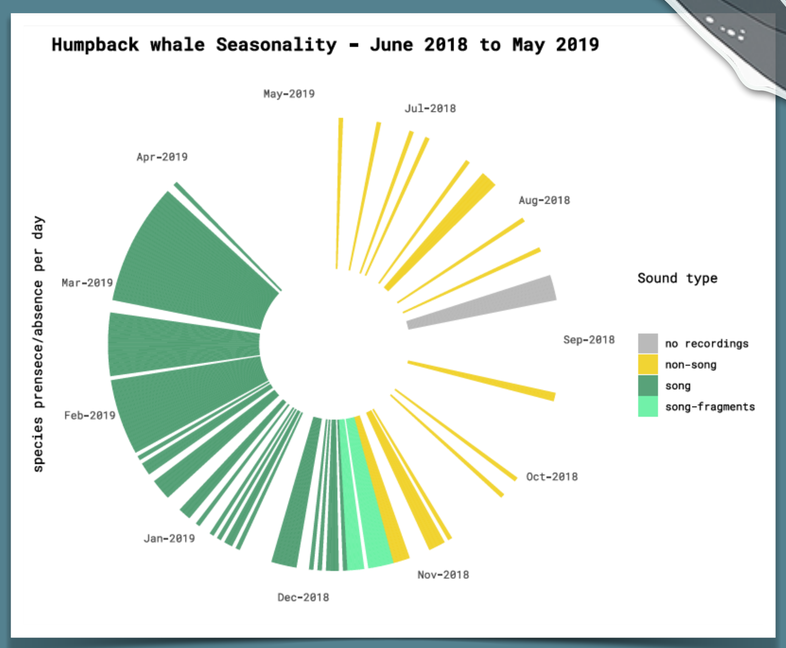
2. Hypothesis of song similarity between two areas: Vestmannaeyjar (Iceland) and out of Vesterålen (Norway)

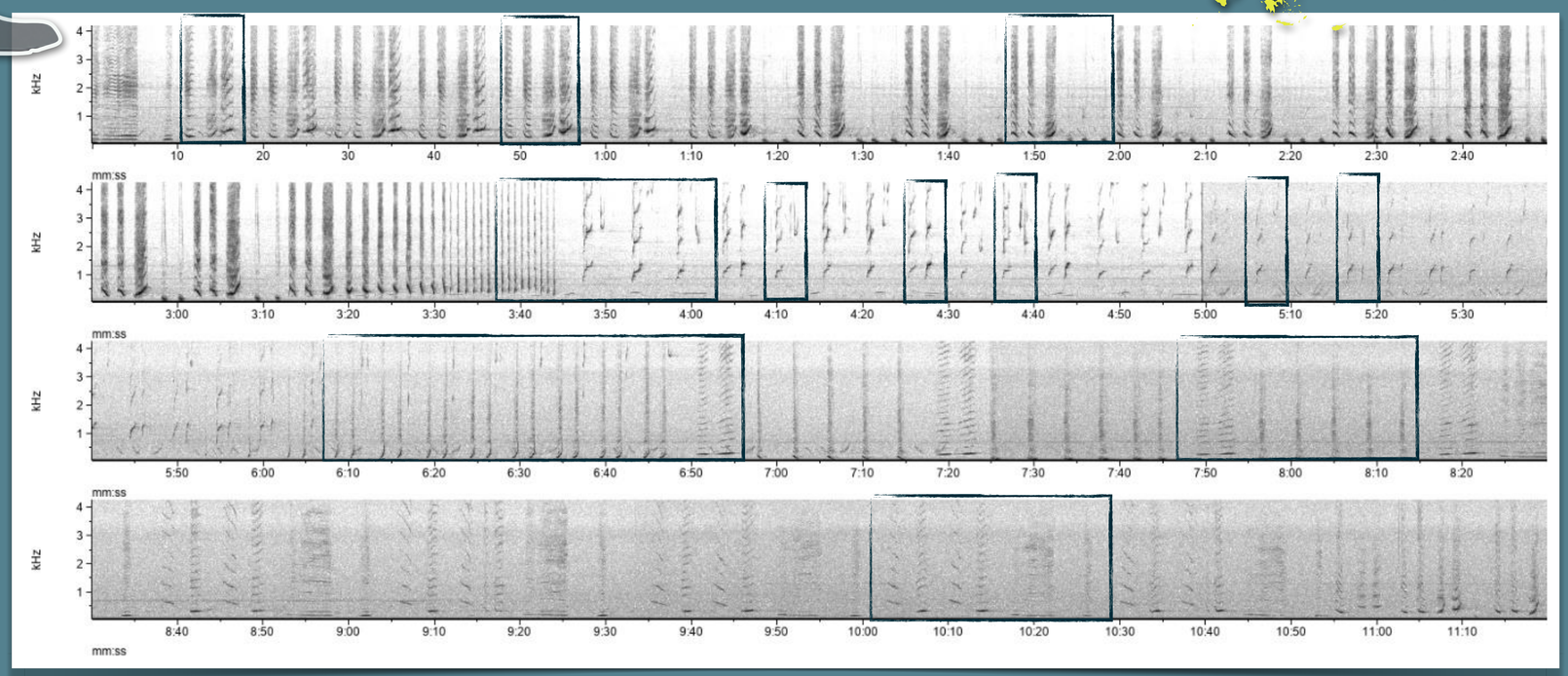
Acoustic dataset from August 2018 to April 2019



RESULTS:

1. Seasonality & Acoustic Behaviour





Presence confirmed 129 days out of 329
Non-song, song fragments and songs vocalizations were recorded

Peak song activity during February 2019 (89%) and March 2019 (90%)

Markov chain showing the most probable theme sequence within the song cycle

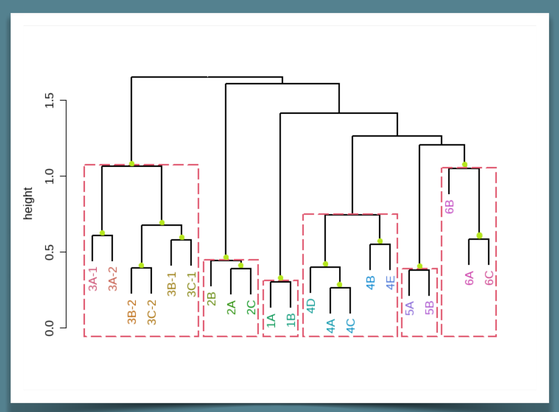
1-2-3-4-5-6

Song structure:
24 Unit types
12 Phrase types
6 Theme types

Listen to the song!

2. Song comparison

The song comparison between Iceland and Norway showed:
19 shared Unit types out of 36 total
4 shared Phrase types out of 21 total
6 shared Theme types



Levenshtein distance value:
0.6/0.7 at phrase level
&
Dice's Similarity index:
58% of shared repertoire between Iceland and Norway

CONCLUSIONS:

Humpback whales revealed to be common during the whole year suggesting the importance of the Vestmannaeyjar archipelago for *Migratory Routes* and as *Feeding Area*.
Presence of singing activity during winter and the song similarity with Norway suggests presence of *overwintering individuals or late migrants*

Further research: PAM for longer periods in the area to better understand song exchange in the North Atlantic and use of feeding and breeding grounds

Magnúsdóttir E. E., Lim R. (2019) Subarctic singers: Humpback whale (Megaptera novaeangliae) song structure and progression from an Icelandic feeding ground during winter. PLoS ONE 14(1): e0210057. https://doi.org/10.1371/journal.pone.0210057
Tyarks S. C., Aniceto A. S., Ahonen H., Pedersen G., and Lindstrøm U. (2021). Humpback Whale (Megaptera novaeangliae) Song on a Subarctic Feeding Ground. Frontiers in Marine Science, 8. https://doi.org/10.3389/fmars.2021.669748
Tyarks SC, Aniceto AS, Ahonen H, Pedersen G and Lindstrøm U (2022) Changes in humpback whale song structure and complexity reveal a rapid evolution on a feeding ground in Northern Norway. Front. Mar. Sci. 9:862794. doi: 10.3389/fmars.2022.862794